We claim:

1. A multimode tapered structure for coupling a multimode laser to a multimode fiber, comprising:

an input end having an elliptical cross section for coupling with said multimode laser; and

an output end having a circular cross section for coupling with said multimode fiber.

2. The multimode tapered structure of claim 1, wherein said elliptical cross section approximately matches a rectangular aperture of said multimode laser.

3. The multimode tapered structure of claim 1, wherein said circular cross section approximately matches a core of said multimode fiber.

4. The multimode tapered structure of claim 1, wherein said multimode tapered structure is tapered from a smaller dimension at said input end to a larger dimension at said output end.

5. The multimode tapered structure of claim 1, wherein said multimode tapered structure has a numerical aperture that is selected to provide a desired coupling efficiency.

6. The multimode tapered structure of claim 1, wherein said multimode tapered structure has a length that is selected to provide a desired coupling efficiency.

7. The multimode tapered structure of claim 1, wherein said multimode tapered structure accepts an optical beam having a highly elliptical beam shape and converts said optical beam for acceptance by said circular multimode optical fiber.

8. An optical coupling system, comprising:

a multimode laser source having a rectangular aperture;

a multimode fiber having a core surrounded by a cladding; and

a multimode tapered structure for coupling said multimode laser to said multimode fiber, said multimode tapered structure having an input end and an output end, said input end having an elliptical cross section for coupling with said multimode laser and said output end having a circular cross section for coupling with said multimode fiber.

9. The optical coupling system of claim 8, wherein said elliptical cross section approximately matches said rectangular aperture of said multimode laser.

10. The optical coupling system of claim 8, wherein said circular cross section approximately matches said core of said multimode fiber.

11. The optical coupling system of claim 8, wherein said multimode tapered structure is tapered from a smaller dimension at said input end to a larger dimension at said output end.

12. The optical coupling system of claim 8, wherein said multimode tapered structure has a numerical aperture that is selected to provide a desired coupling efficiency.

13. The optical coupling system of claim 8, wherein said multimode tapered structure has a length that is selected to provide a desired coupling efficiency.

14. The optical coupling system of claim 8, wherein said multimode tapered structure accepts an optical beam having a highly elliptical beam shape and converts said optical beam for acceptance by said circular multimode optical fiber.

15. A method of coupling a multimode laser to a multimode optical fiber, said method comprising the steps of:

generating a multimode laser beam in a multimode laser source having an aperture; and

positioning a multimode tapered structure to face said laser aperture, said multimode tapered structure coupling said multimode laser to said multimode fiber, said multimode tapered structure having an input end and an output end, said input end having an elliptical cross section for coupling with said multimode laser and said output end having a circular cross section for coupling with said multimode optical fiber.

16. A method for fabricating a multimode tapered structure for coupling a multimode laser to a multimode optical fiber, said multimode tapered structure having an input end and an output end, said input end having an elliptical cross section for coupling with said multimode laser and said output end having a circular cross section for coupling with said multimode optical fiber, said method comprising the steps of:

selecting a cylindrical rod of fused silicon material having a uniform index and a diameter equal to a core diameter of said multimode fiber;

grinding said input end of said cylinder rod to obtain said elliptical cross section and tapering of said cylinder rod from a smaller dimension at said input end to a larger dimension at said output end; and

fusing said rod to said multimode optical fiber.